

**IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF PENNSYLVANIA**

DIANE STACKHOUSE,	:	CIVIL ACTION NO. 1:01-CV-2223
	:	
Plaintiff	:	(Judge Conner)
	:	
v.	:	
	:	
PENNSYLVANIA STATE POLICE	:	
and COMMONWEALTH OF	:	
PENNSYLVANIA,	:	
	:	
Defendants :		

MEMORANDUM

Presently before the court for judgment is the disparate impact claim of plaintiff, Diane Stackhouse ("Stackhouse").

Stackhouse, a Lieutenant with the Pennsylvania State Police ("PSP"), instituted the above-captioned case in November 2001, alleging claims of disparate impact, disparate treatment, and retaliation under Title VII of the Civil Rights Act ("Title VII"), 42 U.S.C. § 2000e-2(a). Specifically, Stackhouse contended that PSP's promotions process from the rank of lieutenant to captain had a disparate impact on women, and that she was a victim of disparate treatment and of retaliation. In November 2004, summary judgment was granted in favor of defendants on the retaliation claim. In September 2005, the disparate impact and disparate treatment claims went to trial. Following four days of testimony, the jury returned a verdict for defendants on the disparate treatment claim, and an advisory verdict for defendants on the disparate impact claim. See 42 U.S.C. § 1981a(a)(1), (c) (providing right to jury trial for disparate treatment cases and where

compensatory or punitive damages, rather than equitable relief, is at issue); Pollard v. Wawa Food Market, 366 F. Supp. 2d 247, 254 (E.D. Pa. 2005) (noting no right to jury trial under disparate impact theory because it provides for equitable relief). While recognizing that the findings of an advisory jury are not binding,¹ upon review of the evidence and testimony of record the court agrees that plaintiff has failed to prove her disparate impact claim.

Title VII makes unlawful those employment practices that, although not adopted with discriminatory intent, result in the treatment of a protected class that is equivalent to intentional discrimination. See Healey v. Southwood Psychiatric Hosp., 78 F.3d 128, 131 (3d Cir. 1996). To establish this “disparate impact,” a plaintiff must prove that the employer’s practice or selection method has a substantial or significantly adverse impact on a protected class. See 42 U.S.C. § 2000e-2(k)(1)(A)(i); see also Newark Branch, N.A.A.C.P. v. City of Bayonne, 134 F.3d 113, 121 (3d Cir. 1998). Causation between the practice and the impact on the protected class is typically established through the use of statistical evidence, which must be “sufficiently substantial” to raise such an inference. Newark Branch, 134 F.3d at 121; see also Watson v. Fort Worth Bank & Trust, 487 U.S. 977, 994-95 (1988). Statistical evidence may be sufficiently substantial to raise an

¹ See Wilson v. Prasse, 463 F.2d 109, 116 (3d Cir. 1972); see also 9 CHARLES ALAN WRIGHT & ARTHUR R. MILLER, FEDERAL PRACTICE AND PROCEDURE § 2335 (2d ed. 1995) (“An advisory jury is an aid to the court in discharging its functions and it is in [the court’s] discretion wholly whether to accept or reject, in whole or in part, the verdict of the jury.”).

inference of disparate impact when the probability of the observed result occurring randomly is less than 5%. See Wilmore v. City of Wilmington, 699 F.2d 667, 670 (3d Cir. 1983); Commonwealth of Pennsylvania v. Rizzo, 466 F. Supp. 1219, 1231 (E.D. Pa. 1979).

In the matter *sub judice*, plaintiff challenged promotions from PSP's 1998 promotions list. The 1998 promotions list identified forty-eight candidates "immediately" eligible for promotion to the rank of captain. Of the forty-eight candidates, forty-two were men and six were women. Seven people were promoted to the rank of captain from that list. All seven were men.

Both parties proffered expert opinion testimony regarding the significance of the difference in the promotion rate of men and women to the rank of captain. Plaintiff presented the opinion of Dr. Charles Nielsen Brasher ("Dr. Brasher"). Dr. Brasher holds a B.A., M.A., and Ph.D. in political science, and is a professor in the department of political science at Shippensburg University. Dr. Brasher took classes in quantitative methods as part of his doctoral program, and his dissertation utilized statistical analysis. He has taught classes in research and quantitative methods—including applied statistics—and has published several articles related to analyzing quantitative data.

Dr. Brasher testified that he could not conduct a statistical analysis of the 1998 promotions list because it contained too few candidates and too few women. Instead, he aggregated the 1998 promotions list with a 1996 promotions list, providing a total pool of candidates large enough to perform an analysis under the

Gamma and difference of proportions tests. According to Dr. Brasher, these tests revealed that 33% of men were promoted, compared with only 10% of women, and that these comparative rates were statistically significant, having only a 3% chance of occurring randomly.

Defendant presented the opinion of Dr. Christopher K. McKenna (“Dr. McKenna”), a recently retired Pennsylvania State University professor. Dr. McKenna holds a B.A. and M.A. in mathematics, and an M.A. and Ph.D. in Operations Research—a field that includes statistics, economics, and mathematical model building. From 1971 through 2002, Dr. McKenna taught undergraduate and graduate courses in statistics, advanced statistics, research designs, advanced research designs, survey methods, advanced multi-variate methods, operations management, management information systems, and computer applications statistics. His doctoral dissertation utilized statistical analysis, and he is the author of a textbook on quantitative methods, several statistics-related articles, and a number of statistics-related reports prepared for various state and federal agencies.

Dr. McKenna testified that the appropriate method for performing a statistical analysis on the 1998 promotions is to utilize the Fisher’s Exact test, which is designed to analyze statistical significance in small samples. Using the Fisher’s Exact test, Dr. McKenna found that there was no statistical significance between the promotion rates of men and women and, in fact, the promotion rate

was the likely outcome, having a 36.6% chance of occurring randomly.² Dr. McKenna also performed the Fisher's Exact test on the combined 1996 and 1998 tests, and found that the probability of the aggregated promotion rate occurring by chance was not statistically significant, having a 12.2% chance of occurring randomly.³

The court finds Dr. McKenna's testimony and opinions statistically more sound and more credible than Dr. Brasher's opinions. Dr. McKenna testified that when an analysis involves two outcomes (e.g., male and female) or a numerically small sample, the Fisher's Exact test is the appropriate method for assessing statistical significance. He cogently testified that the analysis employed by Dr. Brasher was overly broad and useful only when sufficient sample sizes are

² Dr. McKenna also used Fisher's Exact test to analyze the 1996 promotions list, and found that the probability of having one or fewer females promoted from that list was not statistically significant, having a 33.8% chance of occurring randomly.

³ Dr. McKenna testified that it was inappropriate to combine the 1996 and 1998 data sets. He stated that the percentage of people actually promoted from those lists varied substantially between the two years, with approximately 50% of the 1996 candidates being promoted compared to 15% of the 1998 candidates. According to Dr. McKenna, this suggests an inherent difference in the promotions process for those years, making the lists incapable of aggregation. He also testified that guidelines for "meta" statistics—a field typically concerned with the analysis of small sample sizes—provide that small samples should not be aggregated but examined independently.

present.⁴ Although Dr. Brasher testified that he believed that his methods of analyses were preferred over the Fisher's Exact test, Dr. Brasher did not offer any support for this assertion. Indeed, he admitted that Fisher's Exact test was designed for testing small sample sizes—such as the one at issue in this case—and that under such a test the 1998 promotion rates were not statistically significant.

Accordingly, the court finds that Dr. McKenna's proffered Fisher Exact test calculations are the correct method for analyzing statistical significance in this case. While promotions from the 1998 list to the rank of captain infer an imbalance in the promotions process, application of the Fisher Exact test reveals that the actual disparity between the promotion rates of men and women is not statistically significant and hence insufficient to infer causation for a disparate impact claim. See e.g., E.E.O.C. v. Greyhound Lines, Inc., 635 F.2d 188, 192 (3d Cir. 1980) (“[N]o violation of Title VII can be grounded on the disparate impact theory without proof that the questioned policy or practice has had a disproportionate impact on the [protected class] . . . there can be no disparate impact unless there is disparate impact.”). Judgment will therefore be entered for defendants and against plaintiff.

⁴ Dr. Brasher's analysis also utilized a “one-tailed” test that reviewed only one side of the equation—whether women were under-represented in the 1998 promotions—as opposed to a “two-tailed” test, which looks for disparity in either direction—whether women are under- or over-represented. See E.E.O.C. v. Fed. Reserve Bank, 698 F.2d 633, 655-56 (4th Cir. 1983) (noting criticisms of one-tailed tests as way for plaintiffs to “beef-up” their statistics), rev'd on other grounds, Cooper v. Fed. Reserve Bank, 467 U.S. 867 (1984).

An appropriate order will issue.

S/ Christopher C. Conner
CHRISTOPHER C. CONNER
United States District Judge

Dated: October 4, 2005

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FOR THE MIDDLE DISTRICT OF PENNSYLVANIA**

DIANE STACKHOUSE,	:	CIVIL ACTION NO. 1:01-CV-2223
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Plaintiff	:	(Judge Conner)
	:	
v.	:	
	:	
PENNSYLVANIA STATE POLICE	:	
and COMMONWEALTH OF	:	
PENNSYLVANIA,	:	
	:	
Defendants :		

ORDER

AND NOW, this 4th day of October, 2005, upon consideration of the complaint (Doc. 1), and following a trial, and for the reasons set forth in the accompanying memorandum, it is hereby ORDERED that:

1. The Clerk of Court is directed to enter JUDGMENT on all claims in favor of defendants Pennsylvania State Police and Commonwealth of Pennsylvania and against plaintiff.
2. The Clerk of Court is directed to CLOSE this case.

S/ Christopher C. Conner
CHRISTOPHER C. CONNER
United States District Judge